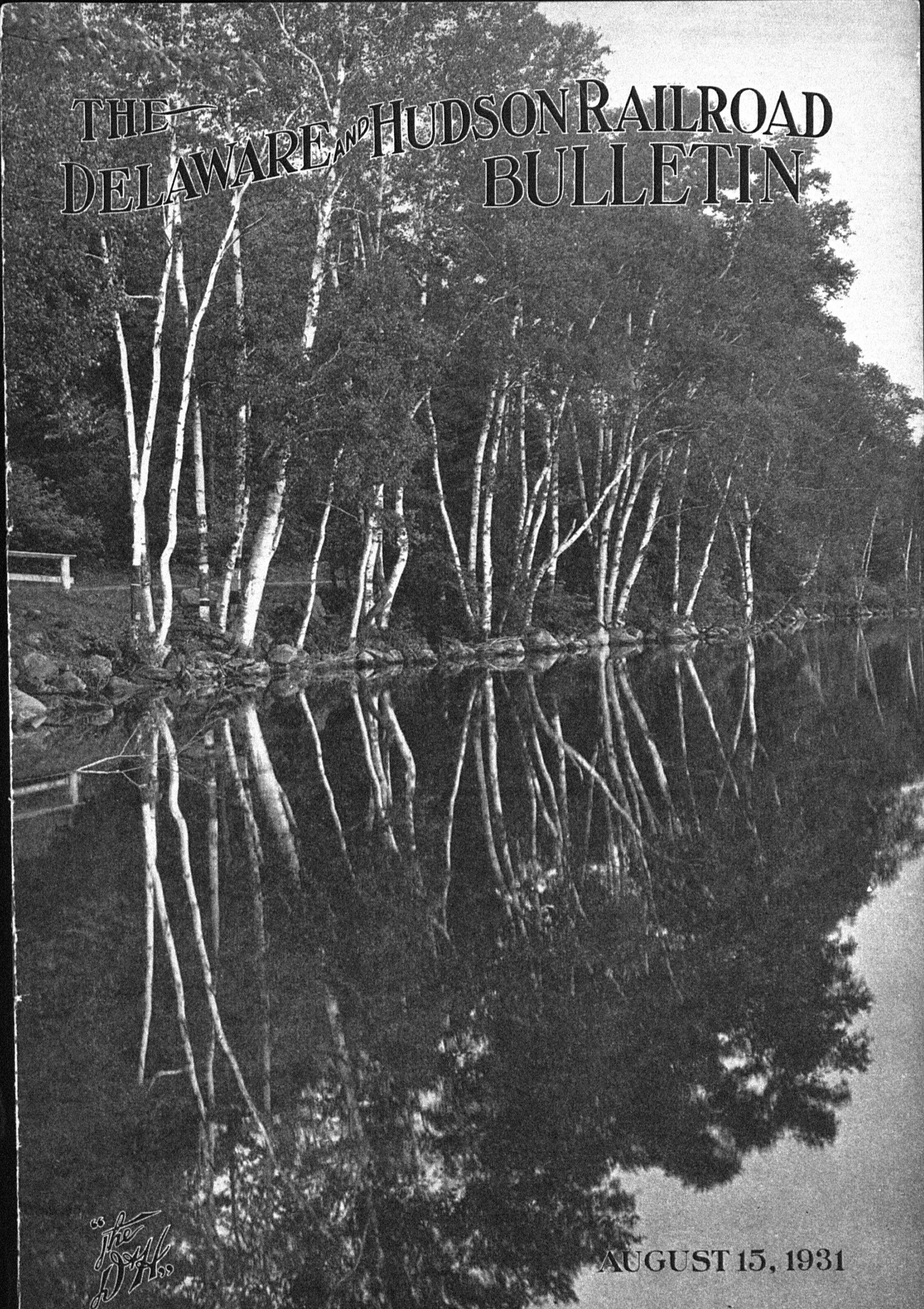
THE DELAWARE AND HUDSON RAILROAD BULLETIN



REFLECTION

"the D&H"

AUGUST 15, 1931

I Will Not Let Go!

I want to let go, but I will not let go!
I am tired, 'tis true, and discouraged and blue,
Worn out through and through! But I will not let go!

I want to let go, but I will not let go!
I am poor and perplexed, disheartened and vexed,
Care not what comes next! But I will not let go!

I want to let go, but I will not let go!
There is work to be done, a race to be run,
A crown to be won! And I will not let go!

I want to let go, but I will not let go!
There are battles to fight by day and by night,
For God and the right! And I will not let go!

I want to let go, but I will not let go!
I never will yield, nor lay down on the field,
Nor surrender my shield! No, I will not let go!

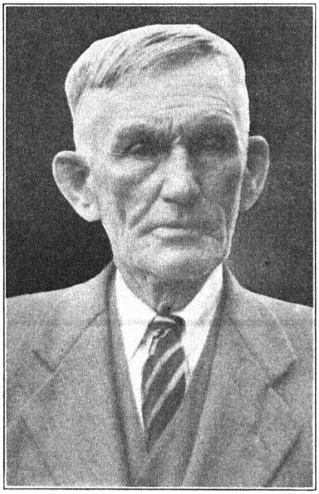
I want to let go, but I will not let go!
Be this ever my song 'gainst legions of wrong!
O God make me strong that I may not let go!

—AUTHOR UNKNOWN

The
DELAWARE AND HUDSON RAILROAD
CORPORATION
BULLETIN

Lived Among Cherokees

As Agent of Lumber Company, Veteran Once Had Home on Reservation



JOHN J. WALSH

LONG before Oklahoma entered the Union as a State, while it was still part of the vast Indian Territory of the pioneer west, JOHN J. WALSH, retired Delaware and Hudson Master Carpenter, lived among and carried on business with the Cherokees. The Cherokees were a highly civilized race; they cultivated a number of crops on the fertile prairie lands; they raised horses, cattle, and other live stock; and their more modern pursuits included the publication of a newspaper in their native sign alphabet, published at Talequa, a city in what is now Oklahoma. The Five Nations of Cherokees are reputed to be the only aborigines having an alphabet.

Although the Territory belonged to the Indians, Whites were free to come and go as they pleased, provided, of course, they obeyed the tribal laws. At times an unwelcome settler would be asked to leave the Territory, a request which the Cherokees were prepared to enforce if necessary; however, the exiled White usually returned a few weeks later after a brief sojourn in a nearby state. By marrying an Indian maiden a White became entitled to all the privileges of tribesmen; he could hold many minor tribal offices, the rank of chief alone being reserved solely for full-blooded Cherokee braves.

MR. WALSH entered the Indian Territory as a representative of the Black Walnut Lumber Company of Jersey City, N. J. Born at Canaan, Wayne County, Pa., JOHN had attended the local grade and high schools, and worked on farms for some time before setting out to see the world. After one year in the lumber company's Jersey City plant, he was offered the position which took him into the majority of states in the Union.

With another man, he inspected black walnut lumber with a view to purchasing it for his company. If it was of good quality, it was bought, loaded on railroad cars, and shipped east for final treatment. The Missouri-Kansas-Texas then formed the only rail link between the Indian Territory and the Lone Star State, Texas. Subsequently its lines were extended in both directions and many other rail lines supplemented its service in the west.

The black walnut lumber was shipped to Paris, France; Hamburg, Germany; Liverpool, England; Moscow, Russia, and many other European cities for use in furniture manufacturing plants. It was cut to about one sixteenth of an inch in thickness and veneered on to softer woods to give a durable finish to the furniture. The quest of this product, valued at approximately $20 per 1000 feet in rough lumber form, led MR. WALSH and his companion through Indian Territory, Kansas, Arkansas, Texas, and many southern states. The Indians, shrewd business men that they were, accepted American currency in payment, with which they purchased the most up-to-date luxuries of the Whites.

After four years in the west, MR. WALSH gave up his position to return home. Throughout the next ten years he worked on the Delaware and Hudson Canal Company's Gravity Railroad as a carpenter. The call of the west took him back to Oklahoma and Arkansas in his old position late in the nineties. Such radical changes had taken place in the west, however, that he soon found himself longing for the comforts of home again.

Back in Carbondale two years later, he was hired by the Maintenance of Way Department, under Bridge and Building Master Burr, as a carpenter. MR. WALSH continued with the Delaware and Hudson throughout the remaining 27 years of his active employment. During that time he assisted in the repair or construction of practically every building on the Pennsylvania Division, including Gravity Railroad stations at Farview, and Lake Ladore, and coal pockets at Honesdale. Experienced in woodwork, MR. WALSH became a gang leader, foreman, and prior to his retirement, which took effect April 1, 1931, he was a Master Carpenter.

In his travels MR. WALSH acquired a large collection of Indian trinkets: arrowheads, bows, arrows, wampum, small items of clothing, all of which he has passed on to his nieces and nephews.

Prized above all the rest, however, is a historical document which he has retained for himself: an issue of the *Boston Gazette and County Journal*, dated Monday, March 12, 1770, over 161 years old. Although now yellow with age, the printing on the old document is still legible. At the top appear the words: "Containing the freshest advices, foreign and domestic."

Written in elegant Colonial language, with the letter "f" used in place of "s" in most instances, numerous passages reflect the rising spirit which five years later broke out in the revolution. It contains a very carefully worded, diplomatic denunciation of the practice of billeting British soldiers in private homes. One of the four twelve- by eighteen-inch pages is devoted almost exclusively to advertisements of sugar, raisins, salt, cocoa, and sperm candles, refined "sperma ceti" oil by the barrel, many of which products would be for sale at the establishment of the merchant named, on the arrival of a specified sailing vessel.

One passage in particular reflects the language and dress of that day, as well as the then common institution slavery. It reads:

"RAN AWAY from his master, John Langdon, the 20th of this instant February, an indented servent lad of 14 years of age, named Ebenezer Blancher. He had on when he went away, a frock and trousers, over a dark striped homespun jacket and breeches, a striped cotton and linen shirt, shoes almost worn out, a pair of figured buckles, this country made. He is a smart ready boy, and will tell a good plausible story. Whoever will take him up and bring him to his master, shall be rewarded for his trouble.

"All Masters of vessels and others, are warned against carrying off, concealing or entertaining the said boy, as they would avoid the utmost penalty of the law, in the case made and provided."

MR. WALSH, who never married, now lives at 13 Eighth Avenue, Carbondale.

Satisfaction Guaranteed At Veterans' Outing

THERE is a "money back" guaranty in connection with the Veterans' Outing which is to be held at Neahwa Park, Oneonta, Wednesday, August 19th, according to President H. N. ATHERTON.

Any veteran who, having partaken of the chicken, blue-fish, clams, sweet corn, watermelon, and other good things which go to make up Caterer Waters' shore dinner, is not satisfied with the dinner, will have his money refunded by Mr. Waters. Veterans who recall the bountiful meal served at Sidney two years ago feel certain that no refunds will be requested.

The complete schedule of the special train which will leave Wilkes-Barre at 7:45 A. M. for the accommodation of the Pennsylvania Division contingent is not available at this writing, but Veterans will be advised later as to the various stops. Those attending the outing from Binghamton, Albany, and points north, will be able to make use of the regular trains which will carry extra cars for the occasion.

An inter-divisional baseball game and other athletic events are scheduled as part of the entertainment at what is expected to be the greatest day the Delaware and Hudson Veterans have ever had. Owing to the central location of the picnic grounds a record breaking attendance is anticipated.

Give Your Heart a Chance

HAVE you ever traveled on an ocean liner? Have you seen it cutting a path across the ocean, riding stormy waves, never halting, never swerving from its course? As long as it kept up this marvelous performance, you probably thought little about the engine that throbbed down in the hold. You were scarcely aware that there was an engine because of the very smoothness and regularity with which it did its work. Then something suddenly went wrong. There was engine trouble. The ship ceased to cut its straight, smooth course through the water. Delays and difficulties followed. You began to realize what that steady throbbing down in the hold had meant to your comfort and safety.

Your body is a little like that liner. Deep within there is a powerful engine, the heart, which makes possible a smooth, steady progress through life. As long as this engine keeps pumping steadily, you forget it exists. Only when it ceases to do perfect work do you appreciate what a remarkable piece of machinery it has been.

Just consider the heart for a moment. Though only about the size of a man's fist, it does an astonishing piece of work. It pumps fifty gallons of blood an hour. It never sleeps, never loafs, never takes a vacation from the beginning of life to the end. The only rest it ever gets is between beats.

And yet with all the work it has to do, the strong heart does not give out suddenly, unless it has been injured or ill-treated. It cannot, however, be expected entirely to withstand the strain of continuous over-exertion, or the repeated attacks of germs or poisons, and the possibly weakening effects of disease.

The treatment and care of the heart are better understood than ever before, yet the average man foregoes the benefit of that better understanding. Under the pressure of work he neglects his heart and unwittingly abuses it.

Heart disease is frequently preventable. What should one do to keep the heart healthy?

1. Go to the doctor every year for a health examination, and follow his advice. This suggestion applies to children as well as adults. After a serious illness, have the doctor give your heart a thorough examination. Then return to active life as carefully and slowly as possible so that your heart will have plenty of time to rest from the strain.

2. Look after infected teeth or tonsils.

3. Go to the dentist regularly.

4. Keep your weight near the average, for a person of your age, sex and height.

5. Have a well-balanced diet and do not overeat.

6. Do not take headache medicine without con-

The chief causes of heart trouble, aside from the natural deterioration of old age, are:

1. Rheumatic fever. Even a mild attack, which passes as "growing pains," may result in serious heart damage.

2. Certain acute infectious diseases. Diphtheria, scarlet fever, tonsilitis, and pneumonia are among the heart's worst enemies, and they may leave the heart impaired even when their attack is light.

3. Syphilis. Syphilis may affect the heart muscle, causing weakness or death even years after the disease itself is no longer apparent.

4. Chronic infections. These may be in some part of the body distant from the heart, such as the tonsils or teeth.

5. Incomplete convalescence. Too abrupt a return to active life, after serious illness.

6. Sudden indulgence of unusual exercise, placing a too severe strain on the heart.

7. Overweight, which often accompanies heart disease, and may well be a factor in its cause.

sulting your doctor. Advertised cures for headaches may contain drugs that are harmful to the heart.

7. Consult your doctor about the use of tobacco and stimulants.

8. Live a well-rounded life. Exercise regularly but stop before you are over-tired.

9. If you have children, consult a doctor whenever one of them complains of even mild leg ache or pains in the joints.

10. Watch your child after he has had one of the "children's diseases" or any serious illness, especially rheumatic fever, diphtheria, scarlet fever, or measles. Have the doctor examine him before he goes back to school. Care at this time may prevent serious trouble later. Early use of antitoxin in treating a case of diphtheria will help save the heart from injury. (But why allow a child to have diphtheria at all when toxin-antitoxin will absolutely prevent it?)

Many of the signs which you may think mean heart trouble can be caused by some other disorder. Indigestion, lung trouble, or nervousness may cause pain near the heart, shortness of breath, and irregularity of beat. If you have any of these symptoms, do not try to diagnose the condition yourself, but go to your doctor for an examination. He will find out what is actually wrong, and he may be able to assure you that your heart is sound.

The heart circulates the blood through every part of the body, sending it out through one set of blood vessels, the arteries, and taking it back through another set, the veins. The blood vessels, especially the arteries, have elastic walls which expand or contract to aid in sending the blood in suitable quantities to parts where it is needed.

In one respect, an artery is like a hose. If water is running gently through the hose and the hose is thin, a slight pressure with the foot will stop the flow. If the water is running with force, or the hose is thick, the foot must press more heavily to stop the flow.

The same is true of the arteries to a degree. For instance, the heart may be pumping with greater force or frequency, or the walls of the arteries may be thick through age or disease. In either case, it will require greater pressure to stop the flow of blood. When the doctor measures your blood pressure, he does practically what you would if you put your foot on a hose. He ties a hollow band around the upper arm. By pumping air into the band, it becomes tighter, until eventually the flow of blood in the arteries ceases. He knows when this point is reached when he can no longer hear the thump of the heart or feel the pulse in the wrist. It will take more pressure to do this if the blood

(Continued on page 253)

Here are some suggestions as to how to take care of a weak or disordered heart:

1. Your play and your work should be approved by your doctor. Shortness of breath may mark the limit of your endurance.

2. Get plenty of sleep every night. When you sleep, the heart gets the most rest. The beats are then less frequent and the period of rest between the beats is longer.

3. Stay out of doors as much as you can.

4. If your doctor prescribes a diet, follow it exactly.

5. Do not use alcohol, tobacco, coffee, or other stimulants without your doctor's consent.

6. Avoid all intense emotional disturbances.

7. Watch your habits—not your heart.

8. Find out what you may do and what you may not do, and live accordingly.

For further advice, send for Metropolitan Insurance Company pamphlets, Health, Happiness and Long Life, The Family Food Supply, and Overweight and Underweight.

If you do have something wrong with your heart, it is well to know it at an early stage. In many cases, heart trouble is curable. Often serious trouble can be put off for years, if the symptoms are detected early and proper care taken. Few people realize the wonderful work they can get from an impaired heart by using it skillfully and discreetly. Dr. Kane, the famous Arctic explorer, had his first attack of heart trouble when he was a young man studying engineering. Repeated attacks led him to give up engineering for the study of medicine and law and later he entered the United States Navy as a surgeon.

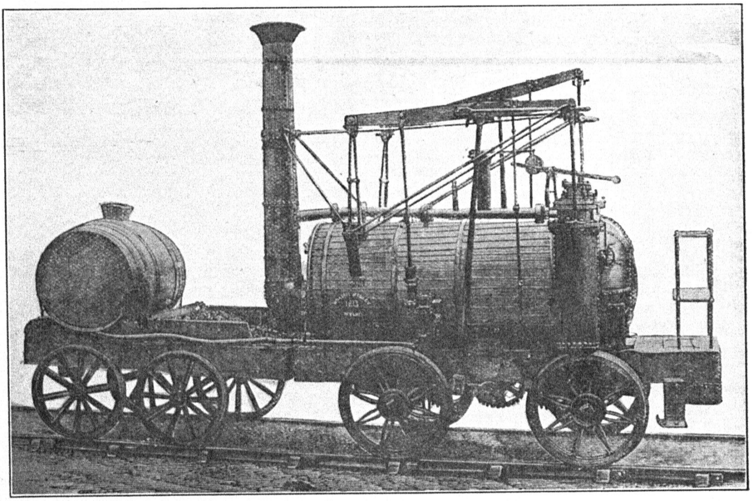
Early English Engines

WHEN the sponsors of the Liverpool and Manchester Railway, England, secured a charter on May 5, 1826, four sources of motive power were available for their use: horses, self-acting inclines down which loaded cars were operated by force of gravity, stationary engines and cables, and locomotives. Twenty-two railways were then in operation in the British Isles, most of them serving coal mines, although the majority were laid on private property and therefore did not require an act of Parliament under which to operate. All four of the above mentioned systems of deriving power were employed on these railways; however, not more than one type was used by any one line.

There were then 18 locomotives actually in service. Four of Blenkinsop's and Murray's rack-rail engines, built in 1812 and 1813, were in operation at the Middleton Colliery, near Leeds, on a three-mile coal road. At Wylam Colliery, near Newcastle, three of Hedley's "Puffing Billy" type engines, built in 1813 for use on plate rails, were in use. Two of these locomotives, although somewhat altered and restored, still survive, one at the South Kensington Museum, and one at Edinburgh. Four engines built by Stephenson at various times between 1814 and 1821, designed for "edge-rails," the modern system with flanges on the wheels, were running at Killington Colliery, also near Newcastle. All seven of the remaining locomotives then in use were constructed by Stephenson: five were supplied in 1822 to the Hetton Colliery, near Sunderland; the other two were purchased by the Stockton Darlington Railway in 1825.

In some places to which engines had been supplied, they had been discontinued owing to their unsatisfactory working. The fate of the locomotive was hanging in the balance; no one, except a few enthusiasts, believing that it had "come to stay." Not only hampered by its own crudity and imperfection, due perhaps even more to lack of the skill and facilities required for manufacturing it than to poverty of design, its chief obstacle lay in the track, which was far too weak to carry it and continually broke under the strain. The usual rate

"Puffing Billy"



of progress was not much more than a walking pace, sometimes not even that.

It is to William James that the credit is due for setting the ball rolling which was kept on the move, with one or two exceptions, until the goal was reached. In 1821 he drew up a plan, based on a preliminary survey, for a "Line of Engine Railroad, from Liverpool to Manchester." The first survey was very imperfect, and a second was made in 1822, with the assistance of Robert Stephenson.

James, owing to ill health and financial embarrassment was unable to proceed further with the matter and he has hardly received the recognition to which he is entitled. In May, 1824, the Committee which had been established to carry out the project appointed George Stephenson engineer.

The first prospectus was issued on October 29, 1824, Charles Lawrence, the Mayor of Liverpool being Chairman, the estimated expense being $1,940,000. Application was made to Parliament early in 1825 and the bill was lost. The new bill came up February 7, 1826. The estimate was increased to $2,473,500.

In the act as passed locomotives were specifically mentioned as the operating power. The act was amended in April, 1827, increasing the capital by $485,000. Further amendments were made in March, 1828, and in May, 1829. The total cost of the line finally turned out to be $5,490,000., or nearly three times the original estimate.

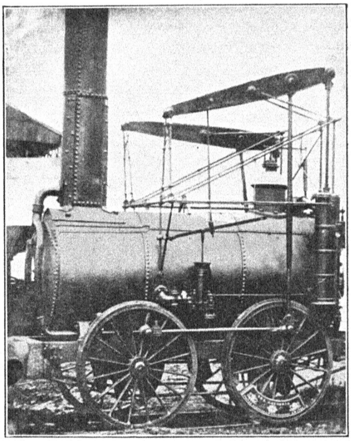
George Stephenson was appointed Chief Engineer in the early part of July, 1826, at a salary of $4,850 a year. It is not too much to say that without his dogged perseverance the success of the locomotive would have been delayed for some, perhaps for many years. He was one of the greatest self-taught geniuses the world has ever seen, considering that the road was the first of its kind, and that he had neither precedents nor preceptors to guide him. The credit for the placing and execution of all its parts is due entirely to him.

He left the service of the company about the middle of 1833, afterward superintending the construction of a great number of railways at home and abroad, retiring from active business in 1840. After his death in 1848, the Directors of the Midland Railway in a resolution declared, "He had left a memory that princes might be proud of, and that the most distinguished man living would be glad to exchange his fame for that which would surround the name of George Stephenson."

His illustrious son, Robert, had taken the leading place at the locomotive factory at Newcastle. His presence was followed almost immediately by a great simplification and improvement in the engines, and the chief credit for the *Rocket* which marked a new epoch in locomotive design, is due to him. After only a few engines (7) on the lines of the *Rocket* had been built, he produced in October, 1830, the *Planet* which was another step in advance of even greater importance, and continued to supply the company with engines for several years.

Between 1824 and 1829 Stephenson built eight additional locomotives, two at Springwell Colliery (sometimes called Mount Moor), and three on the Stockton & Darlington, all of the same primitive design, with vertical cylinders sunk in the boiler, and return connecting rods. The Stockton & Darlington added an engine, Hackworth's *Royal George*, which was a remarkable advance, the first to be direct-acting and certainly the most powerful that had been built. Two others, the *Lancashire Witch* built by Stephenson and the *Agenoria*, built by Foster and Rastrick, on the same lines as their *Stourbridge Lion*, are now in the South Kensington Museum in London.

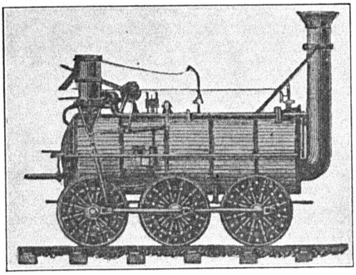
"The Agenoria"



At the Rainhill trials, October 6 to October 14, 1829, the prize was awarded to George and Robert Stephenson and Henry Booth who had entered the *Rocket*. Booth, the Secretary and Treasurer of the company, had suggested the tubes in the boiler, which appear to have been quite an independent idea of his; he also brought out the screw-coupling.

The fast running of the *Rocket* at Rainhill brought out the unsteadiness produced by her steeply-inclined cylinders, and in the rest of the class, Nos. 2 to 8, and 10, they were placed nearly horizontal. The *Rocket* herself was probably altered before the opening of the line.

"Royal George"



The following details may be of interest:

- Diameter of driving wheel 4′ 8½″.
- Cylinders inclined at an angle of 35 degrees, 8″ diameter, 17″ stroke.
- Boiler 3′ 4″ diameter, 6′ long, containing 25 copper tubes, 3″ diameter.
- Working pressure, 50 pounds per square inch.
- There were two exhaust outlets in the chimney, one for each cylinder.
- Weight in working order 4½ tons.
- Weight on driving wheels 2 tons, 12 cwt., 1 quarter.
- Weight on trailers 1 ton, 12 cwt., 3 quarters.
- There was a mercurial pressure gauge, reaching nearly all the way up the chimney.

The reason for making the wheels 4′ 8½″, the same as the gauge, was possibly because this dimension corresponds almost exactly to one revolution per second at ten miles an hour.

Subsequent to the competition, the cylinders were lowered to a nearly horizontal position, being changed over, so that the valves came on top instead of below, and a smoke box was fitted.

In 1834, experiments were made on the *Rocket* with Lord Dundonald's rotary engine, but these were abandoned after about $300 had been expended. She was sold in 1836 to the Midgeholm Colliery line for $1,465.00, and is now in the Kensington Museum.

The *Norhumbrian*, No. 8, built in August, 1830, was the first to have a fire box integral with the boiler, and a respectable tender. It is also probable that she had the first smokebox. It is rather remarkable that this early design proved after all to be the right one, and, with the addition of the brick arch, became the standard form.

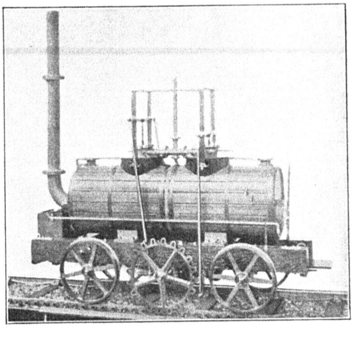
The *Planet*, No. 9, built October, 1830, showed a further marked advance, the cylinders being inside, at the bottom of the smokebox, with the driving wheels at the rear.

The *Atlas*, No. 23, built October, 1831, was afterwards fitted experimentally with an additional pair of wheels which could be lifted off the rails by a steam cylinder. She was also remarkable in having piston valves, the first used on a locomotive.

The *Manchester* (subsequently called the "Calendonian"), No. 28, built in August, 1832, by Galloway, Bowman and Glasgow, and the *Experiment*, No. 32, built March, 1833, by Sharpe and Roberts, were in the nature of freaks.

The *Patentee*, No. 33, built March, 1834, the last engine supplied by Stephenson & Company, was a striking landmark in progress. The *Planet* design was lengthened and a pair of trailing wheels added. The flanges on the driving wheels were omitted, the prototype of many passenger express engines for a half century to follow. There was also an unsuccessful attempt to revive the old "steam-spring" idea for the driving axle.

Blenkinsop's Rack-Rail Locomotive



Parallel motions and the like are satisfactory enough for beam engines, in which the regular motion is very small, but do not have sufficient rigidity for a direct-acting engine, with the big-end sweeping through a distance equal to the stroke, unless made outrageously massive.

(Continued on page 252)

The
Delaware and Hudson Railroad
CORPORATION
BULLETIN

Office of Publication:
DELAWARE AND HUDSON BUILDING,
ALBANY, N. Y.

PUBLISHED semi-monthly by The Delaware and Hudson Railroad Corporation, for the information of the men who operate the railroad, in the belief that mutual understanding of the problems we all have to meet will help us to solve them for our mutual welfare.

Permission is given to reprint, with credit, in part or in full, any article appearing in THE BULLETIN.

All communications should be addressed to the Supervisor of Publications, Delaware and Hudson Building, Albany, N. Y.

Vol. 11 August 15, 1931 No. 16

Are You Too Young?

WHEN, a year or more ago, the University of Chicago surprised the educational world by the unexpected appointment to its presidential vacancy of the young Dean of the Law Department of Yale University, Robert Maynard Hutchins, the selection occasioned not only a good deal of astonishment, but considerable misgiving among seasoned educators lest the youth of the president-elect should interfere materially with the successful discharge of the weighty and multiple obligations the position would inevitably entail. The frivol columns of the daily press also had a great many good-natured jibes to fling at the inexperience and juvenility of the thirty-year-old incumbent of the administrative chair.

But the trustees of the University had excellent precedent for expecting supreme accomplishment from the enthusiasm and ambition of young manhood, inasmuch as important history in all countries has been made by very young men. For instance, note the achievements of a few of them cited below:

Patrick Henry was but twenty-seven years old when he made his famous speech against the Stamp Act.

Thomas Jefferson was thirty-three when he drafted the Declaration of Independence.

Alexander Hamilton was aid-de-camp to Washington at twenty, and Secretary of the Treasury at thirty-two.

Benjamin Franklin had written *Poor Richard's Almanac* at twenty-six.

McCormick was twenty-three when he invented the reaper.

Westinghouse was twenty-three when he invented the air-brake.

William Pitt became Chancellor of the Exchequer at twenty-three, and Prime Minister of England at twenty-four.

James Fox was Lord of the Admiralty and a thorn in the side of King George III at twenty-one.

George Washington was sent by his Colony as ambassador to the French commandant in his first twenties.

Edgar Allan Poe was doing some of his best work at twenty-five, and many other literary men have won success at an exceeding tender age.

This is but a brief enumeration of youth triumphant. There are many more. Who among our readers cannot recall youth triumphs among their own acquaintances? It is none too early to begin. —*Weston's Record.*

The Rudder

WE stood watching the *Alexander Hamilton* of the Hudson River Day Line as she left the pier at Albany this morning. There is not much "sea-room" and it takes quite a bit of maneuvering to get the big boat out into midstream. After backing and swinging the bow out there is a sharp toot of the whistle; the stern line is cast off as the great bulk moves ahead, her paddle wheels churning the water.

As she leaves the dock the rudder is visible, "hard-a-port," yet the boat seems to move straight ahead. Gradually she swings to the left, but even as she does so, you will notice that the rudder has been moved to the opposite side. Seconds pass, they seem like minutes, before the boat answers the helm and heads for the open drawbridge.

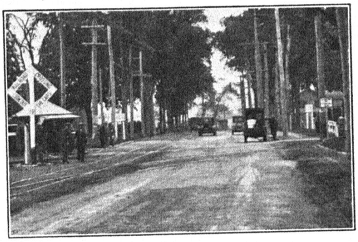
Three hundred feet of boat guided by a rudder perhaps three feet square.—No wonder the response seems slow!

Like a ship, a railroad organization, even when segregated into divisional units, is a huge, unwieldly proposition. Consequently it is necessary for all of us to answer quickly to the "rudder," whether it be in response to a general order from headquarters or the regular handling of daily tasks. The less lost motion and slack there is in the mechanism, the more opportunity the "man at the helm" has to keep the "ship" on a smooth, safe course.

Friends

TO preserve a friend, three things are necessary: to honor him when present, praise him when absent, and assist him in his necessities.

Grade Crossing Eliminated at Glens Falls, N. Y.



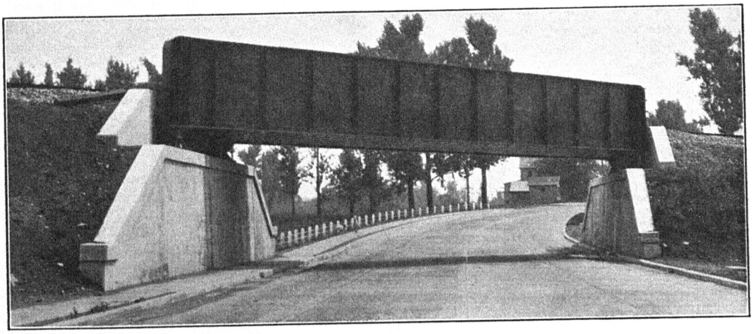
THE elimination of another hazardous grade crossing was officially completed on June 25, 1931, with the opening to traffic of the new underpass 400 feet north of Warren Street, in the city of Glens Falls, N. Y., on our Lake George Branch. Because of its location on a trunk highway leading from Glens Falls to Whitehall, Plattsburgh, and other communities in northern New York State, a number of factors combined to make this a particularly dangerous rail and highway intersection.

The railroad and the highway crossed at a 46-degree angle; a trolley line paralleled the highway, although it had been abandoned some years before the actual work of elimination was begun; and there were industrial sidings on either side of the crossing, the cars on which frequently obstructed the drivers' view. Furthermore, while the crossing was situated within the city limits, motorists drove along this stretch of highway at a rapid pace, thereby increasing the danger of a grade crossing accident.

Late in December, 1928, the New York State Public Service Commission ordered the elimination of the Warren Street crossing and after preliminary surveys, the plans for an underpass were approved. In order to take advantage of a favorable site for the proposed underpass, a new stretch of concrete highway was constructed, leaving the main route at Peck Avenue, passing beneath the tracks at a point 400 feet north of Warren Street, and swinging back into the trunk highway again at Brayton Avenue. The new roadway is of reinforced concrete, forty feet wide, with a five-foot concrete sidewalk on one side. As approved the project lies partially in the city of Glens Falls, the balance being located in the town of Queensboro.

A single 73-foot steel span, of the through girder type, resting on gravity type concrete abutments, carries the tracks over the highway, allowing a clearance of fourteen feet. To obtain the desired clearance it was necessary to raise the railroad grade line a maximum of 3.8 feet above the former level.

Actual work on the elimination project was begun on September 18, 1930, by Scott Brothers Construction Company, Inc., of Rome, N. Y. The alterations in the railroad grade, and necessary signal and telegraph line changes, were all done by the regular Maintenance Department forces.



Early English Engines

(Continued from page 249)

In the middle of 1845 the Liverpool and Manchester had 25 passenger and 18 freight engines, all with 5 foot wheels; the passenger with cylinders 12 by 18, average weight of 15½ tons; the freight, cylinders 13 by 20, weight 16½ tons;—no engines with four wheels nor with outside cylinders.

In 1835, someone had started after a will o' the wisp in the shape of a short stroke. Wood says they began to come in in 1836 and led to an increase of speed, but also to an extravagant increase in coke consumption.

Until 1838 there was no lap in the valves. Exhaust clearance was tried on the *Lightning,* built in June, 1836, by the Haigh Foundry, which necessitated the addition of ¼" lap. Other engines then received increased lap, and the *Cyclops,* No. 46, by the same builders, was fitted with an expansion valve gear patented by John Gray.

The *Rapid,* No. 37, had been built in December, 1835, by Tayleur, and when overhauled in 1840 the lap of 1 inch was applied, producing a 25 per cent economy and rendering Gray's gear unnecessary.

The results of this experiment, which were very striking, are shown below, the figures being pounds of coke per mile (gross):

Summer of 1839, old valves (no lap)	49 lbs.
After new mode of coke deliveries and encouraging competition	40 "
Valves with ⅜" lap	36 "
Valves with ¾" lap	32 "
1 inch lap, old passages	28 "
Same with increased care in firing	22 "
1 inch lap, new engines, enlarged passages, etc.	15 "

For purposes of comparison our recent experience on the Delaware & Hudson has been, the figures being pounds of coal per 1,000 tons (gross) moved one mile, on an 0.8% grade:

Standard consolidation locomotive of 1916	84.5 lbs.
Boiler pressure raised to 275 lbs.	63.3 "
Boiler pressure raised to 350 lbs. (with water tubes in fire box and compound cylinders)	48.8 "
Same with pressure raised to 400 lbs.	45.9 "
Same with pressure raised to 500 lbs. and heating feed water	40.0 "

When all the experimental devices are assembled on one engine the performance should show further improvement.

A number of engines were tried upon the railway, or offered to it, which were not accepted. Moreover, all sorts and conditions of engines seem to have disported themselves on the line, belonging to contractors, collieries, etc.; traces of the old idea of the railroad being a sort of a highway still surviving.

Injectors were first introduced in 1860 and used on engines built by Sharpe, Roberts & Company of Manchester. Two engines, the *Bristol,* and the *Exeter,* were built in 1853-4 by Rothwell & Company, Union Foundry, Bolton, with driving wheels 108 inches in diameter. They also built in December, 1830, an engine, the *Union,* of a curious design, with a vertical boiler, and horizontal cylinders placed high up, driving the rear wheels through rocking levers.

On the Grand Junction Railway, now a part of the London, Midland & Scottish, Locke stated in 1845:

"We have nearly one-half of the engines now with outside cylinders, and we are endeavoring to make them all so; every engine that is out of repair, and has to be substantially repaired or renewed, is now renewed on the new system. This with a view of getting rid of a great deal of machinery under the boiler, and also because of the frequent breakage of the crank axle." Alexander Allen who was the designer says "the quick moving parts should be more in view, and easier of access, reducing also the expense of crank axles, and much connected therewith."

In 1930 a centenary celebration was observed in England to mark the opening of the Liverpool and Manchester Railway on September 15, 1830. Shortly after the centennial an illustrated book entitled *Centenary History of the Liverpool and Manchester Railway,* was published by C. F. Dendy Marshall. It was from this work that the majority of the facts contained in the above article were obtained.

Taking No Chances

The hotel was burning, and the fire roared nearer and nearer to the guest marooned on the window ledge on the sixteenth floor. Below him a dozen firemen were holding a large canvas for him to jump into, but their shouts and signals were in vain. Finally, on the twentieth try, one managed to make himself heard just as the walls were on the point of falling.

"Jump!" he screamed. "Why don't you jump?"

"Not till you lay that sheet down on the ground," the victim bellowed back. "I'm afraid you fellows will drop it!"

We All Like the Man

—Who listens when we talk about ourselves.

—Who laughs when we tell our favorite story.

—Who tells us we are a person of influence.

—Who gives us the chance to act like an expert.

—Who assures us that he never told it to anyone before.

—Who makes us think he depends upon our advice.

—Who gets up and says the things we have been thinking.

—*Exchange.*

Give Your Heart a Chance

(Continued from page 246)

is flowing more forcefully. His instrument measures this pressure, a certain degree of which is normal for each age. This explains what is meant by blood pressure, by "high" blood pressure, and "low" blood pressure, and how they are measured.

High blood pressure is more serious than low blood pressure, although it is not a disease in itself. Like the wailing of an infant, it is a sign that something is wrong, and it may point to any one of many troubles. It means that the heart and arteries are under a greater strain than they should be in order to do their work.

High blood pressure may result from an enlarged or over-active heart; from diseases of the kidneys or arteries; from continued poisoning; from chemical changes in the body; from glandular disturbances; from obesity; from chronic infections; and probably from other causes. Sometimes no physical cause can be found; nervousness, worry, fear, or too much continued excitement and strain being responsible. Whatever the cause of the condition may be, it is important to restore the blood pressure to normal, for if the attempt to work against the increased resistance in the arteries is long continued, the heart may be injured.

The best thing to do about high blood pressure is to prevent it; the next best is to detect it in its early stages and promptly seek a remedy. The first step in either case is to take a thorough medical examination which will include the measuring of your blood pressure. If your doctor finds the pressure high, he will make a thorough search for the cause, and will let you know what he expects you to do. Follow his advice in every respect, but especially as to diet. Avoid over-eating. Keep your weight down to normal. Attend to any infections found in the teeth, tonsils, or other parts of the body. Do not drive yourself to the point where you are always tired. Live reasonably.

You may or may not need medicine. You may need more sunshine and more sleep. For a time you may need to avoid to some extent, or entirely, the business and social affairs that excite you. You may need to give up worry and to guard against all unusual physical and mental strains. If so, don't hesitate. The man who wins the fight with either heart trouble or high blood pressure is the man who leads a quiet, regular, well-balanced life. Victory is to the serene.

For further information, get in touch with the American Heart Association at 370 Seventh Avenue, New York City.

Cooking in the Sky

WHEN the giant U. S. Dirigible Akron, ZRS-4, now under construction in the city for which it has been named, takes to the air, her galley will be fitted with a gas range as modern in its equipment as any in use in the home. In fact, this range, because of its environment on the huge craft, embodies features never before included in gas range construction.

The range will use natural gas as a fuel, because the equipment required is lighter than is used for other forms of heat. Propane, one of the richest portions of natural gas will be purified, compressed into liquefied form, and carried in special light cylinders, constructed for this purpose. A fuel supply to permit staying aloft approximately twelve days without landing will be carried.

The requirements were for a heavy duty large capacity range, yet light in weight, because weight is of primary importance on an aircraft.

Engineers of the United States Navy and the company which is building the Akron, placed a maximum of 110 pounds on the weight of the stove. To secure this unusually low weight, it was necessary to resort to the use of metals not ordinarily used in gas range construction. Cast and sheet aluminum predominate. In lesser proportions, other metals were used including chromium plated steel, nichrome, stainless steel, magnesium, cast iron and bronze.

A few of the noteworthy features of construction are that the range is flame-proof and has no open flames exposed to the air of the galley. The air for the burners enters through flame-proof gauze, which excludes the flame from the galley itself. The range has a capacity sufficient to feed the crew of the dirigible, which will be about 50 men.

When it is realized that this giant aircraft is 785 feet long, 132 feet in diameter, and has a cruising radius of about 14,000 miles, with a speed of 83 miles per hour, it will be realized that the task of feeding the members of the crew is an important one and requires a cooking range of large possibilities.—*Tenney Service*.

How to Save Lives

THE heavy July and August toll of drownings would be considerably lessened if the knowledge of prone pressure resuscitation were universal, says the National Safety Council. Each year scores of persons are saved from death but hundreds more lose their lives because no one close at hand is familiar with proper resuscitation methods.

Here is the approved method of procedure. Practice it. The knowledge may come in handy.

1. Lay patient on his stomach, one arm extended directly overhead, the other bent at the elbow, with face turned outward and resting on hand so that nose and mouth are free for breathing.

2. Kneel straddling the patient's thighs with your knees placed at such a distance from the hip bones as will allow you to assume a comfortable working position over the patient. Place the palms of the hands on the small of the back with fingers resting on the ribs, the little finger just touching the lowest rib, with thumbs and fingers in natural position, and the tips of the fingers just out of sight.

3. With arms held straight swing forward slowly so that the weight of your body is gradually brought to bear upon the patient. The shoulder should be directly over the heel of the hand at the end of the forward swing. Do not bend elbows. This operation should take about two seconds.

4. Now swing backward so as to completely remove the pressure. Then repeat the operation, regularly, timing it to about twelve to fifteen times a minute.

5. Continue without interruption until natural breathing is restored. Patients have been brought back to consciousness after four hours' work.

6. An assistant should loosen clothing about the patient's neck, chest and arms as soon as resuscitation starts.

7. Keep patient warm. Do not give any liquids whatever until patient is conscious.

8. To avoid heart strain patient should be kept lying down after recovery. If the doctor hasn't arrived upon recovery patient should be given some stimulant, such as one teaspoonful of aromatic spirits of ammonia in small glass of water, or a hot drink of tea or coffee.

9. The work should be done immediately at nearest possible point to where patient receives injuries. He should not be removed until breathing is normal and he is fully recovered.

The treatment is to be used in gas or electrocution cases as well as drowning.

Try it now—and teach others. You may find that it pays to know how.

At Grade Crossings

TWENTY-FIVE per cent of the accidents at highway grade crossings in 1930 resulted from operators of passenger automobiles, motor buses, trucks, and motorcycles crashing into side of trains, according to reports just filed by the railroads with the Interstate Commerce Commission and made public by the Safety Section of the American Railway Association.

Of the 4,853 highway grade crossing accidents that took place in 1930, reports showed that 1,276 accidents resulted from such a cause, with 248 persons being killed and 1,771 injured.

This was a reduction of 160 in the number of such accidents compared with 1929, in which year there were 277 persons killed and 2,061 injured as a result of automobiles running into the side of trains.

In 1930, reports showed that 1,130 passenger automobiles alone struck the side of trains, killing 214 persons. In many instances, the operators of these automobiles first crashed through crossing gates before striking the train. In the preceding year, the number of such accidents involving passenger automobiles totaled 1,270 with 225 fatalities.

Logical

A small boy had watched a telephone repairman climb a pole, connect a test set and try to obtain connection with the testboard. There was some trouble obtaining the connection. The youngster listened a few minutes and rushed into the house exclaiming, "Mama, come out here quick. There is a man up a telephone pole talking to Heaven."

"What makes you think he is talking to Heaven?"

"Cause he hollered, 'Hello! hello! hello! good lord, what's the matter up there can't anyone hear?' "

Clicks from the Rails

Air Conditioned Train

For the first time in history a train equipped throughout with air conditioning apparatus is in regular service; it is the Baltimore and Ohio's *Columbian,* operating between New York and Washington. Clean fresh air at the proper temperature is supplied in all cars on the *Columbian,* including smoker, coaches, lounge car, diner, parlor cars, and observation car. The air is drawn into the device just back of the vestibule; passes over coils for cooling, purifying, and de-humidifying; is discharged into the car near the ceiling; and is finally withdrawn by noiseless suction fans. A thermostat automatically controls the temperature. In addition to the air-conditioning feature, the *Columbian's* six-wheel trucks are insulated with thick rubber pads at all metal contact points to absorb vibration, jolts, and noise.

✣

Elephant Blocks Railroad

An elephant, standing on an open-top freight car on the electrified railroad between Poona and Bombay (India) touched the overhead wire with his trunk and was knocked down. Angered, the beast rose to his feet and pulled the wire loose, grounding it on the bridge structure under which he was standing. This tripped out the substation and blocked the main line. After a conference with headquarters, the elephant was unloaded and was forced to walk the remaining 100 miles to Bombay.

✣

Pioneers Honored

Wall decorations in the three new air-cooled Missouri-Kansas-Texas diners will commemorate the pioneers of the southwest. Three of the panels, which will be identical in each car, represent the spirit of transportation: the covered wagon, the early train, and the pony express rider. The fourth panel will depict the Alamo. The state seals of Kansas, Oklahoma, Missouri, and Texas will also be included.

Trainman-Marathoner

Clarence N. Peckham, 43-year old Long Island trainman, has been a marathon runner for 24 years. Peckham was among the 16 runners who completed the 26-mile circuit of Jersey City in the Metropolitan A. A. U. cross-country championship this year. Last year he covered a total of 176 miles in long distance runs. In 1927 he won the five-mile cross-country championship of Long Island in which 40 runners participated. In 1929, he finished first in the cross-country championship run of Suffolk county, and placed second and third in a number of other outdoor runs.

✣

Railroader-Monk

Death recently closed the career of Brother Joseph who for 45 years had worked among the lepers on Molokai Island, Hawaii. Before entering the Trappist monastery at Gethsemane, Ky., Brother Joseph, whose real name was Ira B. Dutton, was a captain during the Civil War, at the close of which he was employed for ten years by the Louisville and Nashville, at Memphis, Tenn.

✣

Woman Rail Official

Miss Lida Zwergel, of the White Pass & Yukon, a three-foot gauge railway in Alaska, is the first and only woman to be appointed Eastern Passenger Agent of any railroad, according to the women's number of the *Baltimore and Ohio Magazine.* During her eight years in that capacity in Chicago, the passenger business of the railroad has increased 300 per cent.

✣

First Train Ride

Although he had met 1,113,000 passenger trains in his 16 years as a "red cap" in the St. Louis Union Station, Joe Banks never rode on the railroad until recently when he made the round trip between St. Louis and Jefferson City, Mo.

Playwrights

The "stage sense" is strong in two Southern Pacific employees. F. S. Smith, Information Clerk at San Francisco, is the author of the recently presented play "The Trail of the Padres." A short time before R. E. Greenwell, son of Master Car Repairer C. J. Greenwell, of the Tucson Division, wrote and directed a pageant entitled "Romance of the Old Pueblo," which was staged by the citizens of Tucson, Ariz., near the foothills of the Catalina mountains.

✣

Pipe Cleaners Provided

Several years ago the Canadian National adopted the practice of placing pipe cleaners in all club and parlor cars, a service which was later extended to the smoking rooms on all passenger cars. They were formerly placed beside the match container attached to the wall; now they are even more accessible in the match holders on top of the movable ash receptacle.

✣

One Train a Year

Anyone who misses the train between Olney and Road on a section of the old Stratford-on-Avon & Midland Junction Railway (England) had better start walking rather than wait for the next train. Should he elect the first alternative, he would have a long, long wait—just one year, exactly. Only one passenger train a year is operated on this section of track; it makes a round trip each Easter Monday.

✣

Woodcock Halt Train

Rail traffic on the Reading was momentarily halted near Coatesville, Pa., when an engineman saw a mother woodcock frantically trying to lift her brood of three chicks over the rails, which were too high for them to leap. After the woodcock family had been helped on its way, the train proceeded.

Error

A MAN should never be ashamed to own he has been in the wrong, which is but saying in other words that he is wiser today than he was yesterday.

—POPE.